### **PCT**

# WORLD INTELLECTUAL PROPERTY ORGANIZATIO



# INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

WO 85/05014 (11) International Publication Number: (51) International Patent Classification 3: A1 (43) International Publication Date: A23K 1/18, A23L 1/04 21 November 1985 (21.11.85) (European patent), HU, IT (European patent), JP, KP, PCT/US85/00766 KR, LK, LU, LU (European patent), MC, MG, ML (21) International Application Number: (OAPI patent), MR (OAPI patent), MW, NL, NL (Euro-25 April 1985 (25.04.85) (22) International Filing Date: pean patent), NO, RO, SD, SE, SE (European patent), SN (OAPI patent), SU, TD (OAPI patent), TG (OAPI 606,062 patent). (31) Priority Application Number: 1 May 1984 (01.05.84) Published (32) Priority Date: With international search report. (33) Priority Country: (71)(72) Applicant and Inventor: COX, James, P. [US/US]; 246 East Bartlett Road, Lynden, WA 98264 (US). (74) Agent: BROWN, Ward; Beach & Brown, 3107 Eastlake Avenue East, Seattle, WA 98102 (US). (81) Designated States: AT, AT (European patent), AU, BB, BE (European patent), BG, BR, CF (OAPI patent), CG (OAPI patent), CH, CH (European patent), CM (OAPI patent), DE, DE (European patent), DK, FI, FR (European patent), GA (OAPI patent), GB, GB

(54) Title: ATTRACTANT-DISSEMINATING FISH BAIT

#### (57) Abstract

Fish bait in the form of pellets or a mass has a somewhat rubbery putty-like surface which serves as a vehicle for attractant and dye and will slough off to disseminate the attractant and dye. The somewhat rubbery putty-like consistency can be produced by the interaction of a thickener such as an alginate or guar gum with a reactant such as borax.

## FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

		•			
AT	Austria	GA	Gabon	MR	Mauritania
AU	Australia	GB	United Kingdom	MW	Malawi
BB	Barbados	HU	Hungary	NL	Netherlands
BE	Belgium	IT	Italy	NO	Norway
BG	Bulgaria	JP	Japan	RO	Romania
BR	Brazil -	KP	Democratic People's Republic	SD	Sudan
CF	Central African Republic		of Korea	. SE	Sweden
CG	-	KR	Republic of Korea	SN	Senegal
	Congo	LI	Liechtenstein	SU	Soviet Union
CH	Switzerland		Sri Lanka	TD	Chad
CM	Cameroon	LK		TG	
DE	Germany, Federal Republic of	LU	Luxembourg		Togo
DK	Denmark	MC	Monaco	US	United States of America
FI	Finland	MG	Madagascar		•
FR	France	ML	Mali		•
	•				

-1-

#### Description

## Attractant-Disseminating Fish Bait

#### Technical Field

This invention relates to fish bait and particularly to fish bait which will disseminate attractant over an extended period of time.

#### Background Art

5

10

15

20

25

30

Breuer U.S. patent No. 2,827,376, issued March 18, 1958, discloses a soft gelatin casing containing oil and breadcrumbs to provide a readily hookable mass that might diffuse oil as an attractant upon being punctured. It appears that attractant oil would not be released if the bait mass were simply placed in a bait container without being perforated.

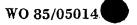
Ora U.S. patent No. 3,579,895, issued May 25, 1971, discloses a lure made of fused resin incorporating fish attractant which constitutes a plasticizer for the resin. Probably such a lure would be quite expensive, would not be immediately degradable and there would probably be insufficient attractant to be of much practical value.

Hardin U.S. patent No. 3,854,234, issued

December 17, 1974, discloses fish bait having a
doughball type filler in a plastisol jacket. Such bait
would probably be prohibitively expensive and it is
questionable whether there would be an effective release
of attractant.

Cox U.S. patent No. 4,362,748, issued

December 7, 1982, discloses fish bait incorporating
alginate in conjunction with metal ion setting agents,
preservatives and preservative neutralizing agents
having attractants incorporated in the alginate-metal
complex, but such attractants are not released sufficiently readily to provide an effective commercial bait.



10

15

20

25

30

Disclosure of the Invention

In accordance with the present invention, fish bait is provided in the form of a somewhat rubbery putty-like or doughy mass, or in the form of pellets coated with such rubbery putty-like material, which material serves as a vehicle for attractant and dye. Material of putty-like or doughy consistency of the bait or pellet coating can be produced by the interaction of a thickener such as an alginate or guar gum and a reactant such as borax, or guar gum as a thickener and qum tragacanth as a reactant, or by the use of pectin as a thickener which may be plasticized with propylene The thickener serves as a vehicle for attractant which may be selected from land animal oil, marine oil, proteins, carbohydrates, amines, amino acids If the attractant and vehicle material and aldehydes. is utilized in the form of a coating for pellets, the pellets can be formed of fish meal or any conventional vegetable or animal waste material molded or extruded to form pellets, preferably from 1/4 inch (6 mm) to 1 inch (2.5 cm) in diameter, which usually are of spherical shape although they may be cylindrical or cubical.

The fish bait becomes slimy when in contact with water and slowly dissipates or sloughs attractantcontaining material which will be dispersed or diffused over a wide area for an extended period of time. characteristics of the fish bait can be established easily to provide the desired attractant- disseminating capabilities. The fish bait has ingredients of types which will insure a long shelf life prior to the bait being subjected to the action of water and can be produced economically, utilizing principally waste It is also versatile and capable of being used in different types of fishing equipment for 35 attracting different types of marine animals and which can be supplied in a variety of forms. The bait can disseminate dye, as well as attractant, to enable the

20

35

area in which the attractant is dispersed or diffused to be identified.

Best Mode for Carrying Out the Invention

The fish bait of the present invention

includes at least three principal components, namely, a vehicle for attractant, attractant and preservative. In addition dye may be used. The fish bait may also include substantially inert extender and may include a pellet core. Some of the attractant ingredients of the

10 bait may function in more than one of such components.

The vehicle is principally responsible for establishing the consistency of the bait or the bait coating and provides a body or coating of somewhat rubbery putty-like or doughy consistency. Such consistency of the vehicle can be obtained by the reaction of alginate, such as sodium alginate or potassium alginate, as a thickener with borax, or by the reaction of guar gum as a thickener with borax, or by the reaction of guar gum as a thickener with gum tragacanth, or by pectin plasticized with propylene glycol. The borax or propylene glycol also has preservative attributes for the attractant and thickener.

The alginate, if of heavy viscosity, i.e. from 800 to 1,000 centipoises, could be used within the range of 1/2 percent to 3 percent by weight, preferably 1 percent, of the bait, excluding any preformed pellets, or if the alginate is of low viscosity, i.e. 62 to 100 centipoises, the quantity used could be 1 percent to 5 percent by weight, preferably 2 percent, of the bait material excluding preformed pellet material. The guar gum could be within the range of 1 percent to 5 percent by weight, preferably 2 percent, of the bait material excluding preformed pellet material.

For bait material not used as coating, the borax content could be 2 percent to 6 percent by weight of the bait material, preferably 3 percent; whereas if

WO 85/05014

5

10

15

20

25

30

35

the bait material is used as a coating for preformed pellets, the quantity of borax in the coating should be 5 percent to 10 percent, preferably 7 percent, of the coating material. If borax is used as a material for reacting with alginate and/or guar gum, the environment must be alkaline for the reaction to occur.

If gum tragacanth is used instead of borax with guar gum, the weight of gum tragacanth and of guar gum should be approximately equal.

If pectin is used as the thickening material to provide the proper consistency for the attractant vehicle and borax is not used, preservatives that may be used as alternatives to borax are hydrochloric acid, HCl, sulfuric acid, H2SO4, nitric acid, HNO3, acetic acid, CH3COOH, proprionic acid, HC=CCOOH, formaldehyde, HCHO, or other aldehyde such as vanillin, CH3O(OH)C6H3CHO, acetaldehyde, CH3CHO, anisaldehyde, CH3OC6H4CHO, or butyraldehyde, C3H7CHO.

The attractant can be land animal oil or fat, marine oil or fat, aldehyde, amine or amino acid, protein or carbohydrate.

It is preferred that an amine such as morpholine O(CH<sub>2</sub>CH<sub>2</sub>)<sub>2</sub>NH be used as an attractant, although other suitable amines such as trimethylamine (CH<sub>3</sub>)<sub>3</sub>N or dimethalamine (CH<sub>3</sub>)<sub>2</sub>NH could be used. Other attractants which could be used are aldehyde, such as vanillin, acetaldehyde, anisaldehyde or butyraldehyde which would serve both as attractant and as preservative. The amount of such attractant would be within the range of 0 percent to 6 percent by weight, preferably 1 percent, of the bait excluding preformed pellet material.

Marine oil that can be used as an attractant includes herring oil, shrimp oil, menhaden oil and anchovy oil. Land animal oil or fat or marine oil or fat could be used within the range of 0 percent to 15 percent by weight, preferably 4 percent, of the bait excluding preformed pellet material.

15

20

25

Attractant or extender may be fish meal, corn meal, alfalfa, chicken waste slurry, seafood process waste such as shrimp process waste, which is principally shell, or clam-processing waste. Such material preferably is used within the range of 5 percent to 60 percent by weight of the bait excluding pellet material.

If the vehicle and attractant material is to be used for coating pellets, it is preferred that the pellets have just sufficient moisture to provide adequate cohesion, which would probably be within the range of 20 to 35 percent by weight of the pellet material. The pellet material could be fish meal and/or grain meal.

The vehicle and attractant material could be applied as coating to the pellets in a single layer or in several successive layers. Where alginate or guar gum is used as the thickening agent, borax could be mixed with the coating material and, after each coating has been applied, powdered borax could be dusted onto the coating to provide a dry, powdery surface prior to use of the bait material.

Dye that could be used preferably would be fluorescent and preferably would be yellow, such as fluorescein dye, C20H12O5. The amount of dye used could be 0.1 percent to 5 percent by weight of the bait excluding preformed pellet material, preferably 2 percent.

A specific example of rubbery putty-like bait material can include:

#### Example 1

30		Weight	<u> </u>
	high viscosity sodium alginate	1.0	용
	water	82.0	용
	shrimp process waste	7.0	ક
	morpholine	1.0	ક
35	marine oil	4.0	ક
33	borax	3.0	용
	dye	2.0	ક
	Total	100.0	ક

20

25

Such material may be placed in bait containers or chum holders. Dispersion of the dye will indicate the area over which the attractant has been disseminated. Such dye should be released slowly, such as over a period up to 8 hours.

A bait having consistency of dough that could be used for crab bait, for example, is:

#### Example 2

		Weight
10	low viscosity sodium alginate	2.0 %
	water	40.0 %
	clam processing waste	15.0 %
	fish meal	10.0 %
	corn meal	10.0 %
15	alfalfa	10.0 %
	chicken waste slurry	10.0 %
	borax	3.0 %

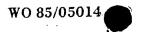
The water and algin are mixed and when the mixture has thickened the clam-processing waste is added. The dry ingredients are then mixed in a ribbon mixer and the thickener, water and alginate, and clam-processing waste are mixed with the dry ingredients in the mixer. When the mixture has become substantially homogeneous, the borax and chicken waste slurry are added to the mixer separately but simultaneously and mixed in.

For coating pellets preformed by being pressed in a mold or extruded that may be made of fish meal and/or vegetable meal, the coating material may be composed of:

30 Example 3

•		Weight	
	water	10.0 %	
	low viscosity sodium alginate	2.0 %	
•	fish oil	5.0 %	
35	homogenized herring	15.0 %	
	mixed amines	1.0 %	
	borax	2.0 %	

The water and alginate are mixed together and when this

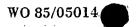


mixture has thickened the fish oil, homogenized herring and mixed amines are mixed in. This material is then applied to the surface of the preformed pellets and powdered borax is sprinkled onto the coating to set the coating. Several layers of such coating can be applied successively to the preformed pellets if desired.

when subjected to the action of water, the surface of such bait material, whether homogeneous throughout the pellet or only constituting the coating, becomes slimy and will slough off, gradually dissipating attractant for dispersion or diffusion throughout an extended period such as from 8 hours to 10 days.

#### Claims

- 1. Fish bait comprising material including a vehicle and attractant carried thereby and having a somewhat rubbery putty-like or doughy surface which will be affected by water to become slimy and slough off gradually thereby disseminating attractant.
- 2. The fish bait defined in claim 1, in which the bait is a somewhat rubbery putty-like or doughy mass.
- 3. The fish bait defined in claim 1, in which the bait includes preformed pellets having somewhat rubbery putty-like surface coating.
  - 4. The fish bait defined in claim 1, in which the bait disseminates attractant over an extended period of time.
- 5. The fish bait defined in claim 1, in which the attractant is selected from the group consisting of animal oil, marine oil, aldehyde, amine, amino acid, protein and carbohydrate.
- 6. The fish bait defined in claim 1, in which 20 the surface portion of the bait contains thickener selected from the group consisting of alginate and guar gum reacted with borax.
- 7. The fish bait defined in claim 1, in which the surface portion of the bait contains guar gum reacted with material selected from the group consisting of borax and gum tragacanth.
  - 8. The fish bait defined in claim 1, in which the surface portion of the bait contains pectin.



- 9. The fish bait defined in claim 1, in which the surface portion of the bait contains amine or amino acid as an attractant.
- 10. The fish bait defined in claim 9, in which
  the surface portion of the bait contains amine as an
  attractant selected from the group consisting of
  morpholine, trimethylamine and dimethylamine.
- 11. The fish bait defined in claim 1, in which the surface portion of the bait contains aldehyde as an attractant.
  - 12. The fish bait defined in claim 11, in which the surface portion of the bait contains as an attractant aldehyde selected from the group consisting of vanillin, acetaldehyde, anisaldehyde and butyraldehyde.
- 13. The fish bait defined in claim 1, in which the surface portion of the bait contains marine oil as an attractant.
- 14. The fish bait defined in claim 13, in which the marine oil is selected from the group consisting of 20 herring oil, shrimp oil, menhayden oil and anchovy oil.
  - 15. The fish bait defined in claim 1, in which the surface portion of the bait contains pectin as a thickener and preservative selected from the group consisting of hydrochloric acid, sulfuric acid, nitric acid, acetic acid, proprionic acid, formaldehyde, vanillin, acetaldehyde, anisaldehyde and butyraldehyde.
  - 16. The fish bait defined in claim 1, in which the surface portion includes alginate, water, shrimp process waste, morpholine, marine oil and borax.

- 17. The fish bait defined in claim 1, in which the surface portion includes alginate, water, clam-processing waste, fish meal, corn meal, alfalfa, chicken waste slurry and borax.
- 5 18. The fish bait defined in claim 1, in which the surface portion includes dye that can be dissipated.
  - 19. The fish bait defined in claim 18, in which the dye is fluorescent yellow dye.
- 20. The fish bait defined in claim 19, in which 10 the dye is yellow fluorescein.

International Application No PCT/US85/00766

According to international Pattern (it several classification symbols apply, noticated alls 1  According to international Pattern (its several classification symbols apply, noticated alls 1  INT. CL. 3A23K 1/18; A23L 1/04  U.S. CL. 426/1, 573, 805  Minimum Occumentation Searched *  Classification Symbols  426/1, 573, 577, 805  U.S.  Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched *  **Classification Gynthem**  **A U.S. A, 2,874,048 FUBLISHED 17 FEBRUARY 1959, WALLDOW 1,2,4,5,13, 14,18  **Y U.S. A, 2,827,376 FUBLISHED 18 MARCH 1958, BREUER 3  **Y U.S. A, 2,827,376 FUBLISHED 18 MARCH 1958, BREUER 3  **Y U.S. A, 2,932,572 FUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  **Y U.S. A, 2,932,572 FUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  **Y U.S. A, 3,579,895 FUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  **Y U.S. A, 3,354,234 FUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  **A U.S. A, 3,354,234 FUBLISHED 17 DECEMBER 1974, 1-20  **A U.S. A, 3,354,234 FUBLISHED 07 DECEMBER 1974, 1-20  **A U.S. A, 4,362,748 FUBLISHED 07 DECEMBER 1982, COX 1-20  ***Comment defining the general state of the art which is not considered to be of particular decimal decimal control of the sealing states of the sealing decimal to the control of the sealing states of the sealing decimal to the control of the sealing states of the sealing decimal to the control of the sealing states of the sealing decimal to the control of the sealing states of the sealing of cannot be considered to be often sealing and date but later than the priority date claimed  **" document published on or ofter states international stilling date of the Actual Completion of the international stilling date of the Actual Completion of the international Search Report **  **A decument member of the same parton taxing the sealing of the same parton taxing the particular decimal search Report **  **A decument member of the same parton taxing the same parton taxing the particular decimal search Report **  **A	international Application No. PC170585700768									
III. DOCUMENTS CONSIDERED TO BE RELEVANT 1:  Classification System   Classification Symbols    ### A Commentation Search Head	I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) 3									
### Special categories of cited documents: 15  ### Cuss. A, 2,387,488 PUBLISHED 17 DECEMBER 1974, 1-20  ### U.S. A, 3,482,748 PUBLISHED 07 DECEMBER 1982, COX  ### Cocument defining the general state of the art which is not considered to be a particular relevance or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument which may throw doubts on priority election or other means. 15  ### Occument is combined with one or more other means. 15  ### Occument is combined with one or more other means. 15  ### Occument is combined with one or more										
Classification System   Classification Symbols   Classification Symbols   426/1, 573, 577, 805										
Classification System   Classification System   Classification Symbols										
Classification Symbols  426/1, 573, 577, 805  U.S.  Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Sparched 5  III. DOCUMENTS CONSIDERED TO BE RELEVANT 1.  Category * Citation of Document, 16 with incleation, where appropriate, of the relevant passages 1.7 Relevant to Claim No. 15  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13, 14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 3,579,895 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  *Special categories of cited documents: 13 "" document defining the general state of the art which is not considered to be of particular relevance. The characteristic of the control	II. FIELDS	SEARCH	HED							
U.S.  Documentation Searched other than Minimum Documentation to the Extent that such Documents are included in the Fields Searched 3  III. DOCUMENTS CONSIDERED TO BE RELEVANT:  Category* Citation of Document, 1* with indication, where appropriate, of the relevant passages 1* Relevant to Claim No. 14  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13, 14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  **Special categories of citted documents: 15  "A" document defining the general state of the series of the finite relation or of the special case o					Minimum Docu	ment	ation-Searched	4,		
U.S.  Documentation Searched other than Minimum Documentation to the Extent that such Documents are inclided in the Fields Saarched 5  III. DOCUMENTS CONSIDERED TO BE RELEVANT 1.  Category Citation of Document, 15 with Indication, where appropriate, of the relevant passages 1.  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13, 14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special catagories of cited documents: 15 or 7 priority date and not in conflict with the application of the Armonic of the special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of accument of particular relevance; the claimed invention carried of conflicted the conflicted with the application of the conflict of the international filing date or given the conflicted of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of accument of particular relevance; the claimed invention carried of conflicted to the international filing date but the conflicted of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially dated of another citation or other special reason (as specially d	Classification	n System				C	lassification Sy	mbols		
Documentation Searched other than Minimum Documentation to the Estent that such Documents are included in the Fields Searched.    Documents Considered to BE RELEVANT:			<u> </u>	··						
Documentation Searched other than Minimum Documentation to the Estent that such Documents are included in the Fields Searched.    Documents Considered to BE RELEVANT:			1.	76/1 573	577 805					
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched 5    III. DOCUMENTS CONSIDERED TO BE RELEVANT 14   Category*   Citation of Document, 15 with indication, where appropriate, of the relevant passages 17   X			7.	20/1, 3/3,	377, 003					
III. DOCUMENTS CONSIDERED TO BE RELEVANT 18  Category* Citation of Document, 18 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of citad documents: 18  """ document defining the general state of the art which is not considered to be of particular relevance. The considered to be of particular relevance to considered to be of particular relevance. The considered to be of particular relevance to the considered to be of particular relevance. The considered to be of particular relevance, the client on or other special reason (as specially claiming) or other special reason (as speci	บ.	s.								
III. DOCUMENTS CONSIDERED TO BE RELEVANT 14  Category* Citation of Document, 14 with indication, where appropriate, of the relevant passages 17  Relevant to Claim No. 14  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13, 14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER  3 U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17  HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  """ document which may throw doubts on or after the international filling date or which is cited to establish the publication date of another which is cited to establish the publication date of another viction or other speaking to some or after the international filling date to other means: """ document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another considered to international filling date but that the priority date claimed in conflict with the application but cited to understand the principle or theory underlying the move of other speaking to be no related repeated to encoderate to considered to international filling date but that the priority date claimed intention or other means: """ document which may throw doubts on priority claim(s) or other means: "" document published give to the international filling date but that the first priority date claimed intention or other means: "" document published give to the international filling date but that the priority date claimed intention or other means: "" document published give to the international filling date but that the first priority date claimed intention or other means the priority date claimed intention or other means the priority date claimed intention or other means the priority date claimed				Docume	ntation Searched oth	ner th	an Minimum Do	cumentation	on Sparahad 5	
Category* Citation of Document, 19 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **To document defining the general state of the art which is not considered to be of particular relevance or which is led to establish the published and or after the international filling date or priority date and not in conflict with the application but of which is led to establish the published on or after the international filling of the considered to a relevance the claimed invention considered to a relevance or which is led to realize the deciment which may throw doubts on priority claim(s) or which is led to realize the province of the published prior to the international filling date but later than the priority date claimed invention or a published prior to the international filling date but later than the priority date claimed invention cannot be considered to inventive step (accument which may throw doubts on priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document passages in the international filling date but international filling date but later than the priority date claimed invention or claim or other special reason (as specified) in the art.  """ document federing to an oral disclosure, use, exhibition or which is not the priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document published after the international filling date but into a transfer of the same patient family decoment or priority date claimed inventio				to the Exter	nt that such Docume	ents a	are included in t	ne Fields	Searched •	
Category* Citation of Document, 19 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **To document defining the general state of the art which is not considered to be of particular relevance or which is led to establish the published and or after the international filling date or priority date and not in conflict with the application but of which is led to establish the published on or after the international filling of the considered to a relevance the claimed invention considered to a relevance or which is led to realize the deciment which may throw doubts on priority claim(s) or which is led to realize the province of the published prior to the international filling date but later than the priority date claimed invention or a published prior to the international filling date but later than the priority date claimed invention cannot be considered to inventive step (accument which may throw doubts on priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document passages in the international filling date but international filling date but later than the priority date claimed invention or claim or other special reason (as specified) in the art.  """ document federing to an oral disclosure, use, exhibition or which is not the priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document published after the international filling date but into a transfer of the same patient family decoment or priority date claimed inventio										
Category* Citation of Document, 19 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **To document defining the general state of the art which is not considered to be of particular relevance or which is led to establish the published and or after the international filling date or priority date and not in conflict with the application but of which is led to establish the published on or after the international filling of the considered to a relevance the claimed invention considered to a relevance or which is led to realize the deciment which may throw doubts on priority claim(s) or which is led to realize the province of the published prior to the international filling date but later than the priority date claimed invention or a published prior to the international filling date but later than the priority date claimed invention cannot be considered to inventive step (accument which may throw doubts on priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document passages in the international filling date but international filling date but later than the priority date claimed invention or claim or other special reason (as specified) in the art.  """ document federing to an oral disclosure, use, exhibition or which is not the priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document published after the international filling date but into a transfer of the same patient family decoment or priority date claimed inventio							•			
Category* Citation of Document, 19 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **To document defining the general state of the art which is not considered to be of particular relevance or which is led to establish the published and or after the international filling date or priority date and not in conflict with the application but of which is led to establish the published on or after the international filling of the considered to a relevance the claimed invention considered to a relevance or which is led to realize the deciment which may throw doubts on priority claim(s) or which is led to realize the province of the published prior to the international filling date but later than the priority date claimed invention or a published prior to the international filling date but later than the priority date claimed invention cannot be considered to inventive step (accument which may throw doubts on priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document passages in the international filling date but international filling date but later than the priority date claimed invention or claim or other special reason (as specified) in the art.  """ document federing to an oral disclosure, use, exhibition or which is not the priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document published after the international filling date but into a transfer of the same patient family decoment or priority date claimed inventio										
Category* Citation of Document, 19 with indication, where appropriate, of the relevant passages 17  X U.S. A, 2,874,048 PUBLISHED 17 FEBRUARY 1959, WALLDOV 1,2,4,5,13,14,18  Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER 3  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, 6-12, 15-17 HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH 19, 20  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **To document defining the general state of the art which is not considered to be of particular relevance or which is led to establish the published and or after the international filling date or priority date and not in conflict with the application but of which is led to establish the published on or after the international filling of the considered to a relevance the claimed invention considered to a relevance or which is led to realize the deciment which may throw doubts on priority claim(s) or which is led to realize the province of the published prior to the international filling date but later than the priority date claimed invention or a published prior to the international filling date but later than the priority date claimed invention cannot be considered to inventive step (accument which may throw doubts on priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document passages in the international filling date but international filling date but later than the priority date claimed invention or claim or other special reason (as specified) in the art.  """ document federing to an oral disclosure, use, exhibition or which is not the priority date claimed invention or claim or other special reason (as specified) in the art.  """ later document published after the international filling date but into a transfer of the same patient family decoment or priority date claimed inventio				UDERED TA RE	DELEVANT 14					
V. S. A., 2,827,376 PUBLISHED 18 MARCH 1958, BREUER  V. U.S. A., 3,421,899 PUBLISHED 14 JANUARY 1969, HUMPHREYS  V. U.S. A., 2,932,572 PUBLISHED 12 APRIL 1960, SARICH V. U.S. A., 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT V. U.S. A., 3,579,895 PUBLISHED 17 FEBRUARY 1981, LIGGETT V. U.S. A., 3,579,895 PUBLISHED 17 DECEMBER 1974, V. U.S. A., 3,854,234 PUBLISHED 17 DECEMBER 1974, HARDIN  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. U.S. A., 4,362,748 PUBLISHED 07 DECEMBER 1982, COX  V. V		MENTS C	UNS	Consument 18	h indication where	appr	opriate, of the re	levant pas	sages 17	Relevant to Claim No. 18
Y U.S. A, 2,827,376 PUBLISHED 18 MARCH 1958, BREUER  Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1974, HARDIN  - Special categories of cited documents: 15  "A" document defining the general state of the art which is not accompanied to the of pages and the specification but all state of the state										1 2 / 5 13
Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT  19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the comment which may shrow doubt on priority claim(s) or document which may shrow doubt on priority claim(s) or cited to understand the principle or theory underlying the comment of particular relevance; the claimed invention cannot be inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such deciment in complicator prevance; the claimed invention cannot be considered to involve an inventive step when the document into particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document member of the same patent family  10 December 1974,  11 December 1982, COX 1-20  12 December 1982, COX 1-20  13	Х	U.S.	А,	2,8/4,048	PUBLISHED	17	FEDRUARI	1939,	WALLDOV	
Y U.S. A, 3,421,899 PUBLISHED 14 JANUARY 1969, HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT  19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the comment which may shrow doubt on priority claim(s) or document which may shrow doubt on priority claim(s) or cited to understand the principle or theory underlying the comment of particular relevance; the claimed invention cannot be inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such deciment in complicator prevance; the claimed invention cannot be considered to involve an inventive step when the document into particular relevance; the claimed invention cannot be considered to involve an inventive step when the document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document member of the same patent family  10 December 1974,  11 December 1982, COX 1-20  12 December 1982, COX 1-20  13										
HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15 or priority date and not in conflict with the application but considered to be of particular relevance """ arrive focument which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of the considered to cannot be considered invention cannot be considered invention cannot be considered invention and invention and invention and invention and invention of particular relevance; the claimed invention cannot be considered invention and in	Y	U.S.	Α,	2,827,376	PUBLISHED	18	MARCH 195	os, BR	EUER	ئ
HUMPHREYS  Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15 or priority date and not in conflict with the application but considered to be of particular relevance """ arrive focument which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of comment which may throw doubts on priority claim(s) or which is cited to establish the gublication of the considered to cannot be considered invention cannot be considered invention cannot be considered invention and invention and invention and invention and invention of particular relevance; the claimed invention cannot be considered invention and in										4 10 15 15
Y U.S. A, 2,932,572 PUBLISHED 12 APRIL 1960, SARICH  Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT  19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **T" later document qualified after the international filling date  "A" document defining the general state of the art which is not considered to be of particular relevance;  "E" earlier document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document defining to an oral disclosure, use, exhibition or other means lished prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search **  21 MAY 1985  International Searching Authority 1  IN. A U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  HAY 1985  INTERNATION 19, 20  HAY 1985  INTERNATION 19, 20  HAY 1985  INTERNATION 19, 20  HAY 1985	Y	U.S.	Α,	3,421,899	PUBLISHED	14	JANUARY	1969,		6-12, 15-17
Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance or "e" earlier document but published on or after the international filling date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the common of particular relevance; the claimed invention considered novel or cannot be considered to considered		HUMP	HRE	YS						
Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance or "e" earlier document but published on or after the international filling date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the common of particular relevance; the claimed invention considered novel or cannot be considered to considered										
Y U.S. A, 4,251,547 PUBLISHED 17 FEBRUARY 1981, LIGGETT 19, 20  A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance or "e" earlier document but published on or after the international filling date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the common of particular relevance; the claimed invention considered novel or cannot be considered to considered	Y	U.S.	Α,	2,932,572	PUBLISHED	12.	APRIL 196	0, SA	RICH	19, 20
A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **T" later document published after the international filing date or priority date and not in conflict with the application but considered to be of particular relevance in the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international considered novel or cannot be considered to invention and the principle or theory underlying the international considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the priority date and not in conflict with the application but cited to understand the principle or theory underlying the criterion of the principle or theory underlying the considered to invention and the principle or theory underlying the criterion of the principle or theory underlying the criterion of the principle or theory underlying the criterion of the international filing date but			•							
A U.S. A, 3,579,895 PUBLISHED 25 MAY 1971, ORN et al 1-20  U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974, 1-20  HARDIN  U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  **T" later document published after the international filing date or priority date and not in conflict with the application but considered to be of particular relevance in the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international filing date or priority date and not in conflict with the application but crited to understand the principle or theory underlying the international considered novel or cannot be considered to invention and the principle or theory underlying the international considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the principle or theory underlying the considered to invention and the priority date and not in conflict with the application but cited to understand the principle or theory underlying the criterion of the principle or theory underlying the considered to invention and the principle or theory underlying the criterion of the principle or theory underlying the criterion of the principle or theory underlying the criterion of the international filing date but	Y	U.S.	Α.	4.251.547	PUBLISHED	17	FEBRUARY	1981,	LIGGETT	19, 20
A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974,  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance:  "E" earlier document but published an or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 1  21 MAY 1985  International Searching Authority 1  International Searching Authority 1  International Searching Authority 1	1	0.00	,	.,,				•		·
A U.S. A, 3,854,234 PUBLISHED 17 DECEMBER 1974,  A U.S. A, 4,362,748 PUBLISHED 07 DECEMBER 1982, COX 1-20  *Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance:  "E" earlier document but published an or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 1  21 MAY 1985  International Searching Authority 1  International Searching Authority 1  International Searching Authority 1	Δ .	II S	Δ.	3 579 895	PUBLISHED 2	25 1	MAY 1971.	ORN	et al	1-20
**Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filling date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 12  21 MAY 1985  International Searching Authority 1  "T" later document published after the international filling date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or priority date and not in conflict with the application but cited to understand the principle or theory underlying the cited to understand the principle or theory understand the priority date or priority date and not in conflict with the application or the priority date or priority date a		0.0.	,	3,5,7,033			,			
* Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" sariler document but published on or after the international filling date and not in conflict with the application but cited to understand the principle or theory underlying the invention or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 2  21 MAY 1985  International Searching Authority 1  *T" later document published after the international filling date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention cannot be considered to involve an invention cannot be considered to involve an invention special reason (as specified)  "Y" document referring to an oral disclosure, use, exhibition or other means "P" document published after the international filling date but later the international filling date but later the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 2  21 MAY 1985  International Searching Authority 1  Signature of Authority 2	Δ	II S.	Δ.	3.854.234	PUBLISHED	17	DECEMBER	1974,		1-20
* Special categories of cited documents: 13  *A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filing date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "B" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 12  21 MAY 1985  International Searching Authority 1  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the cited to understand the prin	**			0,00.,00.						
*Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filling date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 3  International Searching Authority 1  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the considered novel or cannot be considered novel or cannot be considered to involve an inventive step "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "4." document member of the same patent family  Date of Malling of this International Search Report 2  3 0 MAY 1985  International Searching Authority 1  Signature of Authority 2  Signature of Authority 2  Signature of Authority 2  Signature of Authority 2		LULIU								
*Special categories of cited documents: 15  "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document but published on or after the international filling date "I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 3  International Searching Authority 1  "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the considered novel or cannot be considered novel or cannot be considered to involve an inventive step "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "4." document member of the same patent family  Date of Malling of this International Search Report 2  3 0 MAY 1985  International Searching Authority 1  Signature of Authority 2  Signature of Authority 2  Signature of Authority 2  Signature of Authority 2		יו פ	A	4 362 748	PUBLISHED (	07	DECEMBER	1982.	cox	1-20
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered	A	0.5.	α,	4,302,740	100000	••				
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered	K									
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered										
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered										
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered									A	
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered										
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered										
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  2 1 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  To priority date and not in conflict with the application cited to understand the principle or theory underlying the invention or cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle or theory underlying the cited to understand the principle of the considered to involve an invention cannot be considered	<u> </u>									- international filing data
"A" document defining the general state of the art which is not considered to be of particular relevance  "E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 3  International Searching Authority 1  Signature of Authorized Officer 20  International Searching Authority 1										
"E" earlier document but published on or after the international filling date  "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filling date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  21 MAY 1985  International Searching Authority 1  "X" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "4" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "4" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the considered to inv	"A" document defining the general state of the art which is not cited to understand the principle of theory underlying the									
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search \$  21 MAY 1985  International Searching Authority 1  Signature of Authorized Officer 20  Signature of Authorized Officer 20  Land to cannot be considered hove or cannot us considered novel or cannot us considered hove or cannot use or cannot us considered hove or cannot use or cannot use or cannot us considered	were the transfer of the half of the state the international will be the claimed invention									
which is cited to establish the publication date of another citation or other special reason (as specified)  "O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search *  Date of Mailing of this International Search Report *  21 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  Signature of Authorized Officer *  T" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "8" document member of the same patent family  Date of Mailing of this International Search Report *  30 MAY 1985  International Searching Authority 1  Signature of Authorized Officer *  The claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "8" document member of the same patent family  Signature of Authorized Officer *  The claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "8" document member of the same patent family  Signature of Authorized Officer *  The claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "8" document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.  "8" document is combined to exclusion the art.  "8" document is combined to exclusion the art.  "8" document is combined to exclusion the art.  "8" document is comb	filing date cannot be considered novel or cannot be considered nov									
"O" document referring to an oral disclosure, use, exhibition or other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 2  21 MAY 1985  International Searching Authority 1  Addition or other means are discussed in the art.  "a" document is combined with one or more united and or more united and one or more united and or more uni	which is cited to establish the publication date of another  which is cited to establish the publication date of another  "y" document of particular relevance; the claimed invention									
other means  "P" document published prior to the international filing date but later than the priority date claimed  IV. CERTIFICATION  Date of the Actual Completion of the International Search 2  21 MAY 1985  International Searching Authority 1  Signature of Authorized Officer 20  Letter 1985  Signature of Authorized Officer 20  Letter 1985										
"a" document published prior to the international filing date out "a" document member of the same patent family  IV. CERTIFICATION  Date of the Actual Completion of the International Search and Sear	other means in the art.									
Date of the Actual Completion of the International Search 2  2 1 MAY 1985  International Searching Authority 1  Date of Mailing of this International Search Report 2  3 0 MAY 1985  Signature of Authorized Officer 20  Action	"P" document published prior to the international filing date but									
Date of the Actual Completion of the International Search   2 1 MAY 1985  International Searching Authority   Signature of Authorized Officer 20  Action										
21 MAY 1985 International Searching Authority 1 Signature of Authorized Officer 10 Lector 1	Date of Malling of this International Search Report 3									
21 MAY 1985 International Searching Authority 1 Signature of Authorized Officer 20 Action	Date of the Actual Completion of the International Section									
International Searching Authority 1 Signature of Authorized Officer 20	01.14	3 U MAI 1005								
Secre . Jaing	Ci - Ci A Lock Officer 20									
ISA/US GEORGE C. YEUNG	internationa	ıı Searcnin	ıy Aü	monty -			Part	(', ')	Houra,	
	ISA/US				GEORGE C	. YEUN	Y Si			

# THIS PAGE BLANK (USPTO)